

anticipated by Suzuki; and Claims 10 and 13 were rejected under 35 U.S.C. § 103(a) as unpatentable over either Kazama et al or Suzuki in view of level of ordinary skill in the art.

Applicants thank the Examiner for the courtesy of an interview extended to Applicants' representative on November 14, 2002. During the interview, the differences between the present invention and the applied art were discussed. No agreement was reached pending the Examiner's further review when a response is filed. Arguments presented during the interview are reiterated below.

Regarding the rejection of Claims 1, 2, 10 and 13 under 35 U.S.C. § 112, second paragraph, Claim 1 has been amended in light of the comments noted in the outstanding Office Action and as shown in the marked-up copy. Accordingly, it is respectfully requested this rejection be withdrawn.

Further, the rejection of Claim 1 under 35 U.S.C. § 102(e) as anticipated by Kazama et al is moot as Claim 1 has been amended to include subject matter similar to that recited in Claim 2. That is, Claim 1 has been amended to include an insulator member disposed on a wall surface of the teeth portion and extending at about 90° so as to cover a wall surface of the back yoke portion including the connecting intersection of the adjacent back yoke portions. Kazama et al do not teach or suggest the claimed insulating member.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as anticipated by Suzuki. This rejection is respectfully traversed.

The present invention as recited in amended Claim 1 is directed to a stator iron core of an electric motor including plural magnetic pole segments each having a back yoke portion and a teeth portion projected from the back yoke portion. Each of the plural magnetic pole segments is connected together via a connection portion provided to the back yoke portion. Also included is an insulating member, as discussed above, disposed on a wall surface of the

teeth portion and extending at about 90° so as to cover a wall surface of the back yoke portion including a bottom portion of a slot formed at a connecting intersection of adjacent back yoke portions. Further, the bottom portion of the slot formed on the intersection of the adjacent back yoke portions is curved.

In a non-limiting example, Figure 1 illustrates a stator iron core including plural magnetic pole segments connected together via a connection portion 9 in which a bottom portion of a slot 2a formed on a connecting intersection of adjacent back yoke portions is curved. Further, Figure 1 illustrates an insulating member 8 disposed on a wall surface of the teeth portion 3f and extending at about 90° so as to cover a wall surface of the back yoke portion 3e including the connecting intersection of adjacent back yoke portions.

Because the bottom portion 2a of the slot is curved, the stress of the load is distributed to the straight line portions 3k and 3l formed from around the connection portion 9 toward the projected portion 3g, and is not concentrated to the bottom portion 2a of the slot at the time of forming the iron core 7 circularly or at the time of fixing the stator of the electric motor and the housing and the like by press-fitting or shrink-fitting. Therefore, the magnetic performance is not lost, and a further problem can be eliminated that the efficiency of the electric motor becomes worse, sufficient stiffness cannot be kept, or vibration or noise is generated on driving the electric motor (see page 13, lines 6-15).

Further, because the insulating member 8 is coated on the teeth portion 3f to cover the projected portion 3c, the coil wire 6 can be wound without the undesirable space and without being injured (see page 13, lines 22-24).

The outstanding Office Action states Suzuki teaches an insulator 5a. However, as discussed during the interview, the insulator 5a is only disposed on wall surfaces of the tooth portion 4 and does not extend at about 90° so as to cover a wall surface of the back yoke

portion 2 including a bottom portion of a slot formed at a connecting intersection of adjacent back yoke portions. Thus, the same advantages of the present invention cannot be achieved with the device in Suzuki.

Accordingly, it is respectfully submitted Claim 1 and each of the claims depending therefrom patentably define over Suzuki.

Claims 10 and 13 stand rejected under 35 U.S.C. § 103 as unpatentable over either Kazama et al or Suzuki in view of level of ordinary skill in the art. This rejection is respectfully traversed.


Claims 10 and 13 depend on Claim 1, which as discussed above is believed to be allowable. Accordingly, it is respectfully requested this rejection also be withdrawn.

In addition, the specification has been amended to correct minor informalities. A new abstract has also been added. No new matter has been added.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.


Gregory J. Maier
Attorney of Record
Registration No. 25,599
David A. Bilodeau
Registration No. 42,325



22850

(703) 413-3000
Fax #: (703)413-2220
GJM/DAB/cja
I:\atty\DAB\203079US-am.wpd

Marked-Up Copy

Serial No: 09/783,976

Amendment Filed

1-14-03

IN THE SPECIFICATION

Page 11, please replace the paragraph at lines 10-16 as follows:

In Fig. 1, a reference numeral [1] 3 shows a plate-shaped core segment (magnetic pole segment) made of magnetic material, and a reference numeral 9 shows a connection portion (also called as a joint portion) consisting of a concave portion 3a and a convex portion 3b provided to both surfaces of one end of the magnetic pole segment 3 as a connection means. 4 shows the first iron core member in which plural magnetic pole segments 3 are aligned via an end face 3c and an end face 3d of each segment.

Page 13, please replace the paragraph at lines 6-15 as follows:

The stator is structured as described above, the bottom portion [2b] 2a of the slot forms the curved line, so that the stress of the load is distributed to the straight line portions 3k and 3l formed from around the connection portion 9 toward the projected portion 3g, and is not concentrated to the bottom portion 2a of the slot at the time of forming the iron core 7 circularly or at the time of fixing the stator of the electric motor in the housing and the like by press-fitting or shrink-fitting. Therefore, the magnetic performance is not lost, and further problems can be eliminated that the efficiency of the electric motor becomes worse, sufficient stiffness cannot be kept, or vibration or noise is generated on driving the electric motor.

IN THE CLAIMS

--1. (Amended) A stator iron core of an electric motor comprising:
plural magnetic pole segments, [
wherein] each [of the plural magnetic pole segments has] having a back yoke portion
and a teeth portion projected from the back yoke portion, [
wherein] said each of the plural magnetic pole segments [is] being connected together
[so as to be bendable] via a connection portion provided to the back yoke portion[,]; and
an insulator member disposed on a wall surface of the teeth portion and extending at
about 90° so as to cover a wall surface of the back yoke portion including a bottom portion of
a slot formed at a connecting intersection of adjacent back yoke portions,
[wherein the stator iron core is circularly formed by bending the connection portions
of the plural magnetic pole segments, and]
wherein [each of the plural magnetic pole segments is made so that a] the bottom
portion of [a] the slot [constituted by the back yoke portion and the teeth portion has a curved
line after circularly forming the stator iron core] formed at the intersection of the adjacent
back yoke portions is curved.

2-9. (Cancelled).

11-12. (Cancelled).

14-18. (Cancelled).--

IN THE ABSTRACT

(New).